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ABSTRACT

The author's approach to the conceptualization and measurement of natural cognitions which may have some relevance for the study of values is presented. Research on natural cognitions, or ideas entertained by people before an experimenter comes along to disturb them attempts to assess pre-existing concepts which are grouped initially according to the domain of objects to which they refer. Features of the research strategy are examined and findings from studies conducted over the past ten years are cited briefly. The cognitive model and strategy of assessment are explored as they are relevant to the study of values; the present conception of value organization places the person's values within the general cognitive framework that he uses for understanding real objects and suggests that the subjectively absolute and universal qualities that characterize values may derive from the person's idealized interpretation of actually experienced contingencies. References are included. (Author/SES)

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VALUES AND COGNITIVE SYSTEMS *

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Following the definition proposed by Clyde Kluckhohn, a value is regarded as an individual's conception of a desirable state of affairs. It may be distinguished theoretically, in the following ways, from other sorts of motives and attitudes:

1. Most motives refer to phenomenologically optional goals, having the subjective aspect, "I want to act this way." A value refers to a phenomenologically absolute goal, with the subjective aspect, "I ought to act this way."

2. A value refers to an end-state deemed desirable for its own sake; most other attitudes refer to objects whose attractiveness depends on their presumed instrumentality to some desirable end.

3. A person will publicly appeal to a value as justification for his actions, but will not expect other motives and attitudes to command such legitimacy.

4. A person with a value wants other people to share in the goal-oriented activity; other sorts of motives do not necessarily generate such a desire; one may even resent competition from others who share his motives.

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5. A person will blame others for failure to pursue a valued state, but will not blame them for failure to pursue the object of a motive.

6. One will feel moral righteousness in attaining or striving toward a valued state, pleasure in pursuing or attaining motive satisfaction.

7. One will feel guilt for failing to strive toward a valued state, frustration over failure to attain motive satisfaction.

My previous attempts to assess personal values relied on open and closed questions about characteristics that subjects admired in other people. Since that time, I have been following an approach to the conceptualization and measurement of natural cognitions which may have some relevance for the study of values. Natural cognitions consist of the ideas entertained by people before an experimenter comes along to disturb them. Research on natural cognitions differs from the study of concept formation, for example, in attempting to assess pre-existing concepts, rather than to generate new ones.

In this approach, concepts are grouped initially according to the domain of objects to which they refer. A cognitive domain consists of functionally equivalent objects. Needless to say, notions of functional equivalence are not identical from one person to another, and depend on the level of abstraction employed. Nevertheless, linguistic conventions and common cultural heritage generate some domains that are roughly equivalent in outline, if not in detail, for members of a given social group. Among college students in three different cultures I have studied the presumably common domains of nations, acquaintances, family, and self. Among students at the University of Colorado, I have explored additional common domains of celebrities, school, occupation, and societal groups.

For the individual, a cognitive domain consists of the objects he assigns to it, together with the attributes by which he identifies and distinguishes those objects. An attribute usually consists of nominal- or ordinal-scale categories to which objects are assigned. Attributes commonly applied to people are age, ethnic group, intelligence, and attractiveness. A particular object within a domain is defined by a distinctive combination of categories from those attributes that a person brings to bear in thinking about it. Correspondingly, a particular attribute is defined by the set of categories to which the person assigns real or imaginary objects.

Whenever a cognitive domain can be defined as a set of objects and attributes, certain theoretical structural properties may be generated from these two kinds of elements. The objects and attributes defining domains such as nations and acquaintances are fairly obvious, but is necessary to adopt rather special conceptions of some domains in order for the structural model to apply. Objects within the domain of self, for example, consist of the various roles (or recurring activities) that the person engages in; attributes within this domain represent his ways of acting, thinking, and feeling in those roles. Similarly, the family domain is defined by recurrent events (like eating dinner with the family, fighting with a brother), and the subject's reactions to those events are specified as attributes.

Structural properties for a given domain of cognition are defined as variable relations among elements. The property of dimensionality, for example, represents the number and distinctiveness of attributes applied to objects within the domain. Two attributes applied to acquaintances--such as intelligence and competence--might be essentially synonymous for one person, while representing two distinct dimensions for another.

Evaluative centrality represents the proportion of attributes employed by a person, within a particular domain, that are evaluative. One individual may use predominantly descriptive terminology, such as age, sex, and occupation, to identify his acquaintances, whereas another appraises them mainly on evaluative attributes, like honesty and friendliness.

Affective balance represents the degree to which objects of the domain are classified so as to consist of affectively homogeneous groups. One person may conceive his acquaintances as divisible into pleasant and unpleasant types, while another person divides them according to the equally simplistic, but non-pejorative, attribute of gender.

Image comparability is a label chosen for a kind of cognitive integration. It represents the degree to which a person comprehends all objects of the domain by reference to the same standard set of attributes. One person may conceive of his acquaintances according to common attributes--like gender, occupation, intelligence, and neuroticism--applied to all (though using different categories of each attribute), while another person may define his acquaintances on quite distinct attributes, making the objects incomparable--such as "my red-headed girlfriend," "the fat grocer," and "that inconsiderate neighbor."

Affective-evaluative consistency is a more simplistic mode of cognitive integration, related to affective balance. It represents the degree to which objects are classified on evaluative attributes in accordance with one's liking for them. One person may assign desirable characteristics to his friends and undesirable characteristics to his enemies, while another person likes some acquaintances with a preponderance of undesirable qualities, and dislikes some with preponderantly attractive qualities.

Research Strategy

Measures of these and other structural properties of natural cognitions have been obtained by means of open and closed questionnaires. At present, they appear to require at least a high-school literacy level and tolerance for sustained concentration, but it may be possible ultimately to adapt the measures to naturally occurring conversations and even to nonverbal behaviors. The strategy of assessment incorporates the following features:

1. The measures are domain-specific. It is not assumed, a priori, that the level of dimensionality, for example, will be similar in all domains. Instead, instruments are constructed for each cognitive domain of interest, and the degree of inter-domain similarity in the several structural properties is assessed empirically.

2. Within a given domain, a variety of questionnaire formats is employed to assess each structural property. This commitment to convergent operationism has required repeated revision of the instruments, yet some of them are still far from adequate for the purposes intended. Reliabilities of composite scores range all the way from .00 to .69.

3. Whatever domain of cognition is assessed, similar sets of instruments are employed, with appropriately varying content. In latest attempts, with the domains of school and societal groups, reasonably satisfactory instruments could be constructed after one preliminary trial. This contrasts with the half-dozen or so versions required in early attempts to assess the domains of nations and acquaintances.

4. While every structural property is measured with three to six instruments, most of the instruments do multiple duty, yielding up to six properties each. Constant attention is therefore required to assure independence of the properties. In early efforts, we failed to distinguish sufficiently, for example, measures of image comparability from measures of dimensionality,

so the two constructs, though theoretically distinct, yielded measures more highly correlated across properties than within. This difficulty has been substantially reduced by computing new indices of each property that eliminate the effects of massive response sets, such as the number of characteristics listed, or checked, to describe an object. Thereby, subtle refinements in the definitions of structural properties have occurred, which may have theoretical, as well as methodological, significance. For instance, image comparability is better measured as the proportion, rather than the absolute number, of a person's cognitive attributes which he brings to bear consistently in appraising every object within the domain. Affective-evaluative consistency is better measured by utilizing a summative, rather than an averaging, model of consistency.

5. We have concentrated on paper-and-pencil instruments that are appropriate for group testing of reasonably literate subjects without additional oral instructions. This avenue was chosen so that the measures could be obtained without elaborate training of testers or supervision of subjects, and Japanese versions of the instruments have been successfully used with college students under essentially self-administering conditions. Unfortunately, this simplifying strategy limits the range of testing methods, and leaves open the question of relevance to overt behavior. It will be a rude shock if we discover one day that all these cognitive properties are manifest only in paper-and-pencil tests.

6. To the extent possible, we have pursued the ideal of fundamental measurement of each structural property, seeking a natural zero-point and a unit of measure either independent of the particular instrument or linearly translatable from one instrument to another. This is a departure from the common psychometric practice of using the population mean and standard deviation, respectively, as the zero-point and unit of measurement. The

gain from our preferred strategy, if successful, will be to permit comparison of structural properties from one cognitive domain to another, when the contents of the instruments differ radically. We feel reasonably confident, for example, that in the samples studied so far (college students in Boulder, Wellington, and Kyoto), the domain of nations has higher dimensionality, higher ambivalence, and lower affective balance, on the average, than the domain of family; while the domain of acquaintances has a higher mean level of evaluative centrality than the domain of nations, and higher image comparability, on the average, than the domain of self. Such conclusions as these would make no sense in the context of conventional measures, where the number of test items and their contents are the main determinants of test scores. I do not want to overemphasize this apparent advantage, however, for the objective of fundamental measurement is a long way from attainment. It requires fundamental constructs, like dimensionality, and these are currently in short supply within our cognitive theories.

Findings

Some sample findings from studies over the past ten years may be cited briefly:

1. For the structural properties studied so far, there appears to be a substantial degree of cross-domain generality; that is, high scores in one domain tend to go with high scores in other domains. This is especially true of the "cognitive" (as distinct from "affective") properties, like dimensionality and image comparability. In addition, there appears to be a significant degree of domain specificity for the predominantly "affective" properties, such as ambivalence, affective balance, and affective-evaluative consistency.

2. Within the cognitive domains studied so far, certain relations appear rather consistently among the structural properties. For example,

image comparability and ambivalence toward objects are quite uniformly associated with high dimensionality, while affective balance and affective-evaluative consistency are associated with low dimensionality; evaluative centrality is generally correlated negatively with ambivalence, positively with affective balance.

3. Psychological maladjustment--as evidenced by self-report, friends' judgments, and exposure to psychiatric treatment--tends to be associated with high ambivalence and low affective-evaluative consistency within the cognitive domains of self, acquaintances, and family. Comparable relations do not generally appear for the cognitive domains of nations, celebrities, school, and societal groups, thus providing some further evidence of domain specificity for structural properties.

4. These results have been essentially replicated in a variety of samples from three different cultures. Mean levels of the structural properties and mean adjustment scores varied substantially from Kyoto to Wellington to Boulder; nevertheless, the association of maladjustment with ambivalent conceptions of self and others was replicated within all three student samples.

5. In a recent pilot study of clients at the Boulder Mental Health Center, it was found that high dimensionality of cognitions about self and acquaintances at the time of first admission to psychotherapy predicted favorable response to treatment over the next two months. This preliminary result gains further significance in the context of two previously reported findings: first, that final grades in a comparative government class were correlated with students' cognitive dimensionality pertaining to nations, at the beginning of the course, but not with dimensionality assessed at course end; second, that, among a sample of adults in Evanston, dimensionality of nations was associated with ability to reorganize the classification of nations

so as to gain, rather than lose, information. One is led to infer that high dimensionality of a cognitive domain facilitates the acquisition of adaptive information about it. Stated so simply, the proposition seems obvious, but the technology of assessment and the general application from classroom instruction to psychotherapy help rescue it from banality.

The Representation of Values

The cognitive model and strategy of assessment described here may be relevant to the study of values, in several ways:

It would seem appropriate to specify initially the domain of objects to which the values apply. Certainly, the individual's own behavior, interpersonal relations, inter-group, and international relations would appear among the list of potentially relevant cognitive domains. Whether a particular person maintains values within any of these domains, and whether he applies similar values across different domains, are matters for empirical investigation, and should not be prejudged in theory or instrument construction. The fact that subjects we have tested show fairly reliable individual differences in tendency to evaluate objects within a particular domain, and the fact that these tendencies show some degree of domain specificity, indicate that the significance of values to cognitive and behavioral functioning will depend both on the individual and on the cognitive domain studied.

Under the present definition, a value is more, however, than just an attractive characteristic, more than a bipolar evaluated attribute, with one extreme liked and the other disliked by the person. Additionally, he conceives of his own subjective valences as possessing universal validity. In the language of Kurt Lewin and J. F. Brown, there is an ideal cognitive space constructed by the person, in addition to his real space of perceived objects. This ideal space consists of imaginary objects and evaluative attributes deemed to possess universal validity. Presumably, individuals will differ in the number of

absolute evaluative attributes appearing in this space, from zero, for the valueless person, to a number equal to the number of evaluative attributes in the real cognitive space, for the dogmatic absolutist. That is to say, the real space of evaluative attributes applied to actual objects sets an upper limit on the dimensionality of the ideal space.

There are presumably additional simplifying processes within the ideal space. The positing of ideal objects, relatively unconstrained by empirical relations among evaluative attributes, permits the maximal operation of forces toward balancing and affective-evaluative consistency. Each positively ideal object will tend to embody all the absolutely desirable characteristics conceived by the person, and each negatively ideal object will tend to embody their opposites. Thus, the dimensionality of the ideal space is reduced far below what it would be for the same evaluative attributes applied to real objects.

Another simplifying process may work toward congruence among the ideal spaces applied to different domains of objects. While one is constantly reminded of the differences between nations and people, between other people and oneself, a space constructed of ideal objects would suffer no such reality constraints. The very notions, "universal" and "absolutely" desirable attributes, suggest their appropriateness for all objects, as well as for all cognizers of a particular object-domain. So natural inclinations toward parsimony or laziness could encourage the application of identical universalistic standards to the conception of quite different types of ideal objects. In the limiting case, a single ideal space would comprehend all imaginary objects from various domains, together with a single set of absolute evaluative attributes applied to them.

The spectrum between the cynical realist with no ideal objects and no absolute evaluative attributes, on the one hand, and the obsessive moralist with a single ideal space including all his evaluative attributes, on the other hand, is filled with a range of types perhaps more frequently encountered. Among the more interesting nodes on this continuum would be the romantic idealists, for whom real and imaginary objects are intermingled in the same space, and realistic idealists, for whom the imaginary space is distinct, but defined by attributes which bear approximately the same interrelations as are found in the person's real space for that domain.

All of this metaphorical speculation ignores the question of how to assess imaginary objects and absolute evaluative attributes of the ideal space. Assuming that adequate instruments could be constructed for these purposes, it would seem that the present conception of value organization might make some contribution toward the formulation of research on values and moral behavior. It places the person's values within the general cognitive framework that he uses for understanding real objects, and suggests that the subjectively absolute and universal qualities that characterize values may derive from the person's idealized interpretation of actually experienced contingencies.

Also, it suggests certain variable ways of structuring real experience that may help determine the kind of value system the person develops, and whether he develops one at all. For instance, one would predict that low evaluative centrality in the appraisal of real objects would be associated with the absence of a moral system;
also that, given a sufficient set of evaluative attributes in the cognitive domain, those most consistently confirmed in conversations with significant others will be abstracted for incorporation in the ideal space. The presence of absolute evaluative attributes implies the presence of ideal objects,

which are imaginary concatinations of exclusively desirable or exclusively undesirable characteristics. Such an ideal space, in comparison with the cognitive space for comprehending real objects, should display generally lower dimensionality and ambivalence, generally higher evaluative centrality, image comparability, and affective-evaluative consistency. To the extent that a person also maintains a real cognitive space with structural characteristics typical of ideal spaces, his real and ideal spaces are likely to show some confusion, generating either an idealistic view of reality or an obsessive desire to modify it toward the ideal by simple methods.

These speculations have no systematic data base at present. In fact, they sound almost too fanciful

to hold any promise for empirical research. Nevertheless, years of practice in operationalizing the vague constructs of cognitive structure, and the occasional experience of finding them useful for predicting adaptation to real environments, give me some optimism about the utility of this approach for understanding the linkages between real and ideal objects.

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